TUMOR OF THE CORTEX PRODUCING HEMIPLEGIA, WITH LOSS OF TACTILE, PAIN, AND MUSCULAR SENSE.

BY FRANK S. MADDEN, M.D.,
Plattsburgh, N. Y.

THE localization of motor centres in certain well-defined areas of the brain is a scientific fact of fairly accurate exactness. The centres for certain of the special senses—vision, hearing, smell, etc.—have been localized with equally practical accuracy. Common sensation, with its subdivisions of tact, pain, temperature, and muscular perception, has not yet been positively shown to be in constant relation to any definite area of the brain, though much clinical and experimental data has accumulated tending to show that the sensory centres mentioned are quite closely related, if not identical, with the corresponding motor areas. Heusner,[1] Wernicke,[2] Jastrowitz,[3] Gray,[4] and Daskchewitsch[5] have each reported clinical examples of loss of common sensation in association with paralysis of motion, the lesion being in the cortical motor region or in the white matter immediately subjacent. That the anatomico-physiological relationship between motor and sensory centres is a close one, is generally, if not universally, admitted, and especially is this true of the muscular sense.

The case herewith reported is worthy of record in this relation. The history is as follows:

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[1] Heusner: Deutsche med. Wochenschr. October 18, 1888.

[2] Wernicke: Archiv f. Psychiat. und Nervenk. Bd. 20, H. 1. 1888.

[3] Jastrowitz: Deutsche med. Wochenschr. February 23, 1888.

[4] Gray, L. C.: N. Y. Medical Journal. February 19, 1891.

[5] Daskschewitsch: Centralblatt f. klin. Medicin (Leipzig). No. 27, 1891.

[6] Seguin and Weir: American Journal Med. Sciences. July, August, and September, 1888.

R. K. B., aged fifty-one; married; merchant and speculator. Family history good.

Personal History.—Denies syphilis; was always fairly healthy; very temperate in the use of tobacco and alcohol, and not given to sexual excesses. Thirty years ago he received an injury to the back of his head by falling on the ice. In 1888 he was struck over the left occipito-mastoid region with a heavy cane; suffered much pain for two weeks afterward. In the summer of 1890 he had an attack of extreme dyspnœa, nausea, vomiting, and diarrhœa, the result of a run of fifty yards to catch an outgoing steamer.

On October 8, 1890, he had a convulsion, epileptiform in character, preceded by a sensation of severe tension with inco-ordination of movement in the left arm and forearm, followed by loss of power in the arm, which extended to the leg, with, finally, total loss of consciousness and convulsive movements affecting both sides of the body, but particularly the left. Vomiting of the cerebral type occurred two hours after a return to consciousness. Under sodii bromid. he remained well after this attack, until October 23d, when he had a succession of epileptic seizures of the Jacksonian type, affecting the left arm, preceded by loss of power and paræsthesiæ in the limb affected. Vomiting again occurred about four hours after the attacks had ceased.

About this time the patient complained of slight occasional headache; was much depressed mentally, and at times irritable and quite nervous. Numbness, tingling, and various other paræsthesiæ of the left hand gave him great annoyance. Loss of tactile sense was demonstrable in the left hand, and was absolute in the ring finger. There was also loss of muscular sense, with marked ataxia at times. One or two light attacks of a convulsive character occurred during the next month, and but little change was noticeable in the patient's condition.

On November 23d he had a violent epileptic convulsion, preceded by the usual aura and with disturbance of vision and ataxic aphasia. Vomited after the seizure as before.

On December 1st he had another attack, involving the left upper extremity, neck, and face.

The patient's condition did not vary materially during the ensuing two months, although there was a gradual progression of all symptoms; a noticeable drag of the left foot became apparent, and the gait became staggering. The pain in the head and tenderness (region of right parietal eminence) increased in intensity. Impairment of tact and muscular sense was also more conspicuous.

One or two slight seizures occurred in February, and the patient developed a mental condition of exaggerated excitability, with attacks of hysterical crying.

Ophthalmoscopic examination (Buller, of Montreal) in March demonstrated a commencing optic neuritis.

About this time the patient underwent a remarkable change mentally. He became lively and cheerful and at times hilarious. His paresis in leg, arm, and face gradually increased, and the entire left side became hyperalgesic paroxysmally.

Early in April the patient's condition became one of bed-ridden helplessness; and, about April 8th, symptoms of extreme compression began to develop: Mild, wandering delirium, difficulty in swallowing, incontinence of urine and fæces, thick and incoherent speech, high pulse, elevated temperature, and finally coma and death on the 16th.

Drs. Dunham, Kellogg, and Hyde were present and assisted at the autopsy, done on the 17th.

On removing the calvarium, a bulging of the left hemisphere was noticed, over which the dura was much thinned. This bulging corresponded to a depression in the calvarium, into which it had pressed during life, causing absorption of the inner and outer plates of the left parietal bone, which was so thin as to be translucent. This depression was one-half inch to the left of the longitudinal sinus and over the posterior part of the post-central convolution. A smaller protuberance, with a corresponding (though lessened) thinning of the bone, was noticed on the opposite or right side. The dura was found to be extensively adherent over both hemispheres, but most tenaciously at the bulging point in the left. On stripping away the dura, the pia mater over the right parietal lobe presented a mottled and granular appearance, and the entire parietal lobe on this side bulged out markedly. At a point where the posterior central, the superior frontal, and the supra-sylvian convolutions form an angle, there was an irregular spot, about half an inch in diameter, which appeared to have undergone fatty or waxy degeneration. Fluctuation was detected at this point; and a probe, passed directly into this spot, was followed, when withdrawn, by a few drops of a straw-colored serous fluid. A second passage of the probe, one inch behind this point, reached a hard mass about three-quarters of an inch beneath the surface. A longitudinal incision, made three-quarters of an inch from the median line, revealed a cavity, previously detected by the probe, which proved to be the anterior portion of the tumor undergoing cystic degeneration. This cavity measured, vertically, one inch; longitudinally, one and three-quarter inches; and transversely, one and one-quarter inches. Behind and a little to the outer side of this broken-down mass, but continuous with it, was found another nodular mass, as large as a good-sized walnut, which was firmly adherent to the cerebral substance behind it. Both sides of this degenerated growth were easily separated from the surrounding tissue and also the anterior portion of the nodular mass behind; but the posterior portion was so firmly adherent to the cerebral substance, that a portion of the latter was removed with the growth. The tumor involved the posterior central, superior parietal, supra-sylvian, anterior portion of the angular, and occipital convolutions of the right hemisphere. The tissue immediately surrounding the tumor was much softened. Section of the left hemisphere showed nothing abnormal, except the bulging above mentioned, which was presumably due to pressure.

Microscopical examination showed the growth to be a melano-sarcoma.

The patient was seen in consultation at different times by Drs. Stewart (of Montreal) and Spitzka and Gray (of New York). Operation, which was suggested by Dr. Gray, was not done, for the reason that the consent of the family could not be obtained. It is questionable whether an operation would have been beneficial if done at any time after a diagnosis could have been made.